



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/563,796

06/27/2006

Karim-Mathieu Bouchalat

016906-0460

5368

22428 7590 08/06/2009
FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

RUBY, TRAVIS C

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

08/06/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,796	Applicant(s) BOUCHALAT ET AL.	
	Examiner TRAVIS RUBY	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/9/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 4, 5, 7, 8, 10, 13, 15, 16, 20, 24, and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Regarding claim 1 line 9, the phrase “the actuating device virtually completely brings about the flow” is unclear in its meaning. The term “virtually” also renders the claim indefinite since it is a term is a relative term.
5. Regarding claim 4, the phrase “a predefined angle” renders the claim indefinite since it is not clear as to what the angle is.
6. Regarding claim 4 last line, the term “its” renders the claim indefinite since it is unclear which structure “its” is referring to.
7. Regarding claim 5 last line, the term “it” renders the claim indefinite since it is unclear which structure “it” is referring to.
8. Regarding Claim 7, the term “asymmetrical” renders the claim indefinite since there is nothing to compare the symmetry with and there is no defined view for the cross section.

Art Unit: 3744

9. Regarding claim 8 line 4, it is unclear what the phrase “a free cross section” is actually referring to and renders the claim indefinite.

10. Regarding claim 8 lines 5-6, the term “an element” is unclear as to what this actually is and renders the claim indefinite.

11. Regarding claim 10 lines 3-4, the term “preferably” and “is particularly preferable” renders the claim indefinite. A broad range or limitation followed by linking terms, e.g. preferably, and a narrow range or limitation within the broad range or limitation is considered indefinite since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired.

12. Regarding claim 13, the phrase "and the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

13. Regarding claim 15, the phrase “a predefined distance” renders the claim indefinite since it is not clear as to what the distance is.

14. Regarding claim 16, the phrase “a predefined angle” renders the claim indefinite since it is not clear as to what the angle is.

15. Regarding claim 20, the term “infinitely” renders the claim indefinite since it is unclear as to how the actuating device can be adjusted.

16. Regarding claim 24, the phrase "and the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Art Unit: 3744

17. Regarding claim 28, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 1-6, 8-24, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Ku (US2002/0000313A1).

Ku teaches:

Re Claim 1. An installation arrangement for an air-conditioning system with a heating apparatus (ref 42), in particular for motor vehicles (Paragraph 26 lines 1-4), having at least one housing (ref 1) in which air is fed in an at least partially predefined flow path (ref 11, Paragraph 26 and 27), and which has at least one heating apparatus and at least one actuating device (ref 16), with the heating apparatus being arranged in a first flow path and the actuating device being arranged at least partially in a second flow path (Figure 1, Paragraph 27, 29), wherein in at least one position (ref 172 is open) the actuating device virtually completely brings about the flow through the heating apparatus (Paragraph 27, 35).

Re Claim 2. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

the housing has at least one inlet (Paragraph 34 lines 1-5) and at least one outlet (refs 13, 14, and 15) for the air (Paragraph 26).

Re Claim 3. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

the heating apparatus (ref 42) is selected from a group of heating apparatuses which contains heat exchangers, CO₂ heat pumps, heaters which use exhaust gas heat, fuel heater, condensers, stationary-mode heaters, electric heaters, PTC heaters and the like (Paragraph 30).

Re Claim 4. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

the heating apparatus has a core which conducts heat and whose heat exchanger surface is formed by baffle plates which are arranged at a predefined angle to the main direction of extent of the core, in a heat-conducting fashion on its surface (Paragraph 30, This is inherent of conventional heat exchangers, Figure 2 shows a conventional heat exchanger with a heating core and baffle plates).

Re Claim 5. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 4, in that wherein

Art Unit: 3744

at least part of the surface of the heat-conducting core has a flow of air around it (Paragraph 31).

Re Claim 6. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 5, in that wherein

the cross section of the heat-conducting core is such that the flow of the air at least along part of the surface of the heat-conducting core is essentially laminar (Paragraph 31, 40 recites a smooth flow of air which is the definition of laminar flow).

Re Claim 8. The installation arrangement for an air-conditioning System with a heating apparatus as claimed in claim 4, wherein

a free cross section (ref 19) through which some of the air which flows through the heating apparatus (ref 42) flows is formed between the heat-conducting core and an element (ref 32) which adjoins the heating apparatus and at least partially bounds the first flow path (Paragraph 29 and 31).

Re Claim 9. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 4, wherein

a third flow path through which a heating medium flows is arranged within the heat-conducting core (ref 421 and 422, Paragraph 30).

Art Unit: 3744

Re Claim 10. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 9, characterized in that wherein
the heating medium (refrigerant) is a fluid (Paragraph 30).

Re Claim 11. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 9, wherein
the heating medium which flows through the heat-conducting core brings about a temperature gradient across the cross section of the core (Paragraph 30, It is inherent of a heat exchanger to have a temperature gradient).

Re Claim 12. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 4, wherein
a temperature gradient of the heat-conducting core is at least partially parallel with a temperature gradient of the air which flows through the heating apparatus (Paragraph 30 and 31, It is inherent of a heat exchanger and thermodynamics to have a temperature gradient when two mediums are exchanging heat).

Re Claim 13. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein
the buffer plates of the heat exchanger surface have a basic shape which is selected from a group of shapes which contains squares, rectangles, circles, ellipses, polygons, combinations of

Art Unit: 3744

the latter and the like (Paragraph 30, This is inherent of conventional heat exchangers, Figure 2 shows a conventional heat exchanger with a heating core and rectangular baffle plates).

Re Claim 14. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

the heating apparatus is arranged in a bypass duct (Paragraph 27 and 29, The heating apparatus is in an alternate flow path of the normal air flow).

Re Claim 15. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

the heating apparatus is arranged at a predefined distance from the external wall of the housing (Paragraph 30, Figure 1 illustrates the heating apparatus is a distance from the external wall).

Re Claim 16. The installation arrangement for an air-conditioning system with a heating apparatus as claimed claim 1, wherein

the heat exchanger surface of the heating apparatus assumes a predefined angle to the longitudinal axis of the motor vehicle (Paragraph 20, Figure 4 illustrates the heat exchanger is horizontal).

Re Claim 17. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

Art Unit: 3744

at least one fan, in particular an electric fan, which promotes the movement of air through the device within at least one flow path is provided in the housing (Paragraph 26 lines 1-4, Paragraph 34 lines 1-5).

Re Claim 18. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

the air is fed directly and/or indirectly into the passenger compartment of a motor vehicle through the outlet (Paragraph 34).

Re Claim 19. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

the actuating device can be moved into at least two positions (Paragraph 27, 34, 35).

Re Claim 20. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

the actuating device is infinitely adjustable, with the proportion of air which is fed through the heating apparatus and/or past the heating apparatus being changed and in particular closed-loop and/or open-loop controlled depending on the position (Paragraph 27 lines 9-12).

Re Claim 21. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

Art Unit: 3744

a second actuating device (ref 151) which essentially prevents a flow of air counter to the main direction of flow of the first flow path is arranged downstream of the heating apparatus in the first flow path (Paragraph 26 and 35).

Re Claim 22. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 21, characterized in that wherein

the second actuating device is embodied in such a way that it is at least partially opened by the air flowing through the heating apparatus in the main direction of flow.

Re Claim 23. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 21, wherein

the second actuating device has a actuating element which at least partially counteracts an opening movement of the actuating device (Paragraph 26 and 35).

Re Claim 24. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

the actuating devices are selected from a group of actuating devices which contains flaps, swinging flaps, segmented flaps, wing flaps, shutters, in particular iris shutters and the like (Paragraph 26).

Re Claim 29. The installation arrangement for an air-conditioning system with a heating apparatus as claimed in claim 1, wherein

Art Unit: 3744

the individual elements and/or assemblies of the device are arranged basically one behind the other in the flow path, in which case in particular at least one element and/or one assembly can be removed from the main flow path of the air by means of a bypass (Paragraph 26, Figure 1).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ku (US2002/0000313A1) in view of Hessari (US4287945).

The teachings of Ku have been discussed above.

Re Claim 7. Ku teaches a heat exchanger but fails to specifically teach the cross sectional shape of the heat-conducting core is asymmetrical. Hessari teaches an asymmetrical heat exchanger (Figure 2, Column 2 lines 6-22, Column 3 lines 12-19). In view of Hessari's teaching it would have been obvious to one of ordinary skill in the art at the time of invention to include an asymmetrical heat exchanger to Ku's air conditioner since it provides for a more efficient heat exchange and thus improves performance.

22. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ku (US2002/0000313A1) in view of Smith et al (US2004/0182562A1).

Art Unit: 3744

The teachings of Ku have been discussed above.

Re Claim 25. Ku fails to teach a device for filtering air, in particular in the region of the inlet is provided.

Smith et al teaches a filter (ref 66) for a heat exchanger used for a vehicle heating and air conditioning apparatus (Paragraph 27, Figure 1).

In view of Smith et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include a filter to Ku's air conditioner because it keeps the system operating at maximum efficiency by preventing the heat exchanger coils from getting clogged. In addition, a filter can remove air borne contaminants from the air supply.

Re Claim 26. Ku fails to specifically teach a closed-loop or open-loop control device which performs closed-loop or open-loop control on, in particular, the quantity of air flowing through is provided on the at least one inlet and/or outlet for the air.

Smith et al teaches a closed-loop or open-loop control device which performs closed-loop or open-loop control on, in particular, the quantity of air flowing through is provided on the at least one inlet and/or outlet for the air (Paragraph 37, Figure 10).

In view of Smith et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include a controller with Ku's air conditioning apparatus since it allows for optimal and efficient control over the positioning of the vent doors and the air temperature.

Art Unit: 3744

Re Claim 27. Ku teaches an air conditioner in a vehicle but fails to specifically teach that the air is fed at least partially along a dividing wall adjoining an internal combustion engine, and in that at least one heating apparatus is arranged in particular in this region.

Smith et al teaches that the air is fed at least partially along a dividing wall adjoining an internal combustion engine, and in that at least one heating apparatus is arranged in particular in this region (Paragraph 9 and 23. Figures 1 and 2).

In view of Smith et al's teachings it would have been obvious to one of ordinary skill in the art at the time of invention to include an air supply that goes through a dividing wall to Ku's vehicle air conditioning apparatus since it allows outside air to enter inside the vehicle cabin which is also common knowledge of how a vehicle air conditioner works.

23. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ku (US2002/0000313A1) in view of Hashimoto (US2005/0126773A1).

Re Claim 28. Ku fails to specifically teach the device has at least one sensor which is selected from a group of sensors which determine the temperature, pressure, speed such as, for example, the flow rate of a medium, or the position of a component.

Hashimoto teaches the device has at least one sensor (ref 31) which is selected from a group of sensors which determine the temperature, pressure, speed such as, for example, the flow rate of a medium, or the position of a component (Paragraph 27).

In view of Hashimoto's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to include a temperature sensor to Ku's air conditioning system

Art Unit: 3744

because it allows the air conditioner to operate at its optimum efficiency by measuring the air temperature and responding accordingly.

Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRAVIS RUBY whose telephone number is (571)270-5760. The examiner can normally be reached on Monday-Thursday 7:30-5:00, Friday 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Travis Ruby/
Examiner, Art Unit 3744

/Frantz F. Jules/
Supervisory Patent Examiner, Art Unit 3744